Oct. 10, 1961 L. TISDALE 3,003,518

FAUCET SUDS DISPENSER

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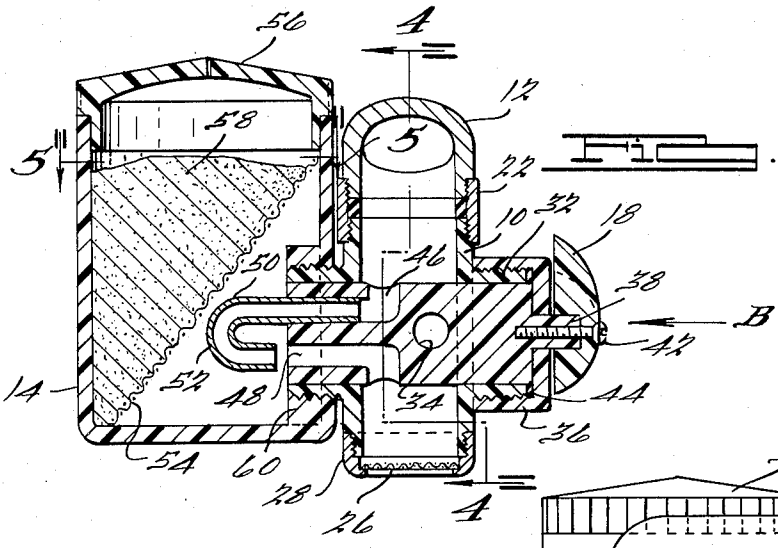


FIG. 1.

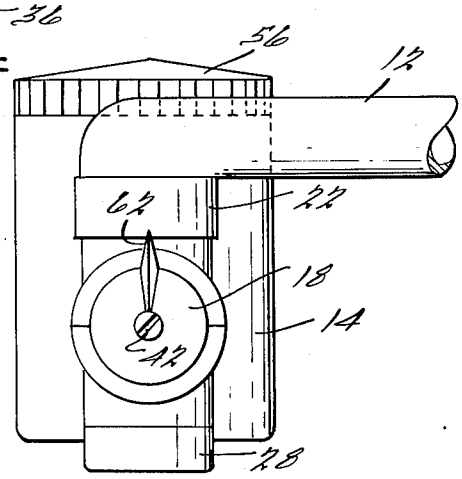
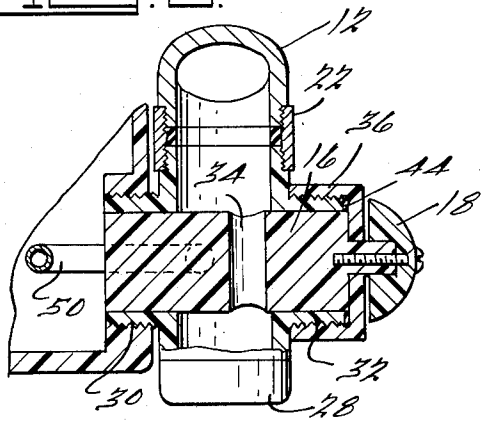


FIG. 2.

FIG. 3.



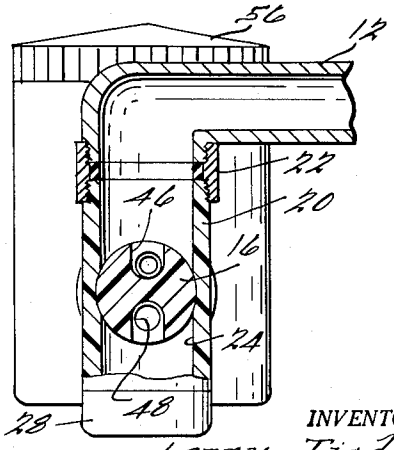


FIG. 4.

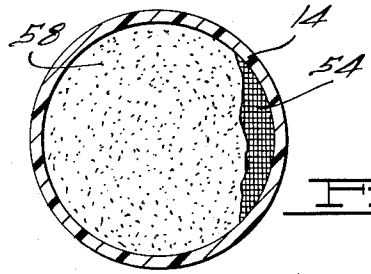


FIG. 5.

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FAUCET SUDS DISPENSER

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This invention relates to a faucet suds dispenser adapted for attachment to a faucet for mixing a detergent with the water as it flows from the faucet.

A principal object of the invention is to provide a new and improved faucet suds dispensers which is adapted for attachment to a faucet.

Other and further objects of the invention will be apparent from the following description and claims and may be understood by reference to the accompanying sheet of drawings, which by way of illustration show a preferred embodiment of the invention and what I now consider to be the best mode of applying the principles thereof. Other embodiments of the invention may be used without departing from the scope of the present invention as set forth in the appended claims.

In the drawings:

FIGURE 1 is a sectional view of a dispenser embodying the invention;

FIGURE 2 is an elevational view of the dispenser attached to a faucet and looking in the direction of the arrow B of FIGURE 1;

FIGURE 3 is a fragmentary view similar to FIGURE 1, showing the valve in a position to permit the flow of water from the faucet directly through the dispenser;

FIGURE 4 is a sectional view taken along the line 4—4 of FIGURE 1; and

FIGURE 5 is a sectional view taken along the line 5—5 of FIGURE 1.

A dispenser embodying the invention comprises a cruciform hollow valve body **10** adapted for attachment to the spout **12** of a faucet, a detergent reservoir **14**, a valve member **16**, and a knob or handle **18** connected to the valve **16** and disposed on the exterior of the body **10** whereby the valve **16** may be shifted between its various positions.

The arm **20** of the body is externally threaded whereby it may be secured directly to the internal threads of a faucet. However, as shown it is secured by a threaded collar **22** to the external threads on the spout **12**.

The body **10** is provided with a water passage **24** therethrough, and a conventional screen **26** may be secured to the body **10** across the lower end of the passage **24** by a collar **28**. The rotary valve member **16** extends across the passage **24** intermediate the ends thereof and is journaled in aligned bosses **30** and **32** formed by arms of the body **10**.

The valve **16** is provided with a passage or duct **34** therethrough whereby when the valve **16** is disposed as illustrated in FIGURE 3, water may flow directly through the passage **24** without forming suds. A cap **36** is threadedly secured to the boss **32** and provides a means for securing the valve **16** in assembled relation with the body **10**. A stem **38** on the valve **16** projects through an opening in the cap **36**, and the dial or knob **18** is secured to the stem **38** by a screw **42** whereby the valve **16** may be shifted between its various positions. A seal **44** is disposed between the end of the boss **32** and the inner end face of the cap **36**.

The valve **16** is provided with a duct **46** which extends from the upstream end of the passage **24** into the reservoir **14** and with another duct **48** which extends from the reservoir to the downstream side of the valve member **16**. The duct **46** includes a return bend **50**, the discharge end of which is spaced from the end of the duct **48** and which discharges water into the duct **48**. The bend **50** is provided with one or more orifices **52** arranged to discharge a jet of water against a screen **54** which is disposed within the reservoir and divides the space therein into a detergent storage space and a mixing chamber. The reservoir is closed by a cap **56** which when removed permits the detergent storage portion of the reservoir **14** to be charged with a suitable dry soap or detergent **58** in granule, crystal, or powder form, the same being hereafter referred to as a detergent.

In the position as shown in FIGURES 1, 2 and 4, the valve **16** is arranged to obstruct the flow of water directly through the passage **24** and to divert the flow of water through the ducts **46** and **48**. The water which escapes from the bend **50** through the orifice **52** will impinge against the screen **54** and the detergent supported thereby, thereby creating a detergent solution in the mixing space within the reservoir **14**, which is the space below the screen **54**. The detergent solution thus formed will be sucked or entrained into the duct **48** by the stream of water discharged from the return bend **50** into the duct **48**. The size of the orifice **52** and the number thereof, as well as the spacing between the end of the return bend **50** and the beginning of the duct **48**, will control the rate of formation of the detergent solution and the addition thereof to the water stream which is discharged by the bend **50** into the duct **48**.

The boss **30** is threaded into a threaded opening in a reinforced wall portion **60** of the reservoir **14** whereby the reservoir **14** is attached to the valve body **10**. The valve **16** is shiftable between the position as shown in FIGURES 1, 2 and 4 and the position as shown in FIGURE 3. The knob **18** may be provided with a pointer **62** which will indicate to the user the position of the valve. As shown in FIGURE 2, the knob **18** is in the clear or no suds position, whereas when the valve **16** is in a position so as to effect the formation of suds and the addition thereof to the water, the pointer **62** will be in a position 90° either side of that shown in FIGURE 2.

The flow of water through the dispenser is controlled by the usual valve which forms a part of the faucet to which the dispenser is attached. The size of the orifice **52**, the number thereof, and the spacing between the bend **50** and the intake of the duct **48** are such that liquid in the reservoir **14** preferably will not rise more than about one-half inch above the bottom of the reservoir **14**, thus preventing the detergent thereabove from going into solution.

While I have illustrated and described a preferred embodiment of my invention, it is understood that this is capable of modification, and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. A suds dispenser for attachment to a faucet, said suds dispenser comprising a valve body having a water passage therethrough, a detergent reservoir having an opening in a wall thereof, said body having a hollow boss disposed in said opening and forming part of a means attaching said reservoir to said body, a two-position rotary valve member extending across said passage intermediate the ends thereof and journaled in said boss, said valve member having a first position in which a bore permits the flow of water directly through said passage, said valve member having a duct extending from one side thereof into said reservoir and another duct extending from said reservoir to the other side of said valve member, said ducts being disposed so that when said valve member is in another position water may flow from said passage on one side of said valve member into said reservoir and hence from said reservoir to said passage on

the opposite side of said valve member, said reservoir being adapted to hold a mass of detergent for mixture with the water which flows through said reservoir when said valve member is in its other position, and a handle connected to said valve member and disposed on the exterior of said body for shifting said valve member between its two positions.

2. A suds dispenser according to claim 1 including a screen in said reservoir dividing the same into a detergent storage space and a mixing space, said first-mentioned duct including a return bend portion disposed in said mixing space and arranged to discharge into said second-mentioned duct, said return bend portion having an orifice therein arranged to discharge a jet of water against said screen.

3. A suds dispenser for attachment to a faucet, said dispenser comprising a cruciform hollow valve body having a water passage therethrough, a detergent reservoir having an opening in a wall thereof and attached to said body, one of the arms of said body forming a hollow boss secured in fluid flow relation with respect to said opening, a rotary valve member extending across said passage and journaled in said boss, said valve member having a first position in which a bore permits the flow of water directly through said passage, said valve member having a duct extending from one side thereof into said reservoir and another duct extending from said reservoir to the other side of said valve member, said ducts being disposed so that when said valve member is in another position water may flow from one end of said passage into said reservoir and thence from said reservoir to the other end of said passage, said reservoir being adapted to hold a mass of detergent for mixture with the water which flows through said ducts when said valve member is in said other position, and a knob connected to said valve member and disposed on the exterior of said body for shifting said valve member between said positions.

4. A suds dispenser for attachment to a faucet, said suds dispenser comprising a valve body having a water passage therethrough, a detergent reservoir having an opening in a wall thereof and attached to said body, said body having a hollow boss disposed in fluid flow relation with respect to said opening, a two-position valve member disposed across said passage and in said boss, said valve member having a first position in which a bore permits the flow of water directly through said passage, said valve member having a duct extending from one side thereof into said reservoir and another duct extending from said reservoir to the other side of said valve member, said ducts being disposed so that when said valve member is in another position water may flow from one side of said passage into said reservoir and thence from said reservoir to the other side of said passage, said reservoir being adapted to hold a mass of detergent for mixture with the water which flows through the reservoir when said valve member is in said other position, and a handle connected to said valve member and accessible on the exterior of said body for shifting said valve member between its said positions.

5. A faucet suds dispenser according to claim 4 including a screen in said reservoir dividing the same into a detergent storage space and a mixing space in the bottom of said reservoir which communicates with said ducts, and means associated with one of said ducts arranged to discharge a jet of water against said screen.

References Cited in the file of this patent

UNITED STATES PATENTS

2,371,720	Stine	Mar. 20, 1945
2,604,446	Palmer	July 22, 1952
2,785,012	Frewin	Mar. 12, 1957